

## **REMARKS**

### **1. Summary of Office Action**

In the Office Action mailed May 22, 2007, the Examiner rejected claims 1, 2, 6-20, 21, 22, 24, 25, 26, 32-49, and 54 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0051140 (Buddhikot) in view of U.S. Patent No. 5,958,018 (Eng). The Examiner also rejected claims 3, 5, 23, and 27-30 under 35 U.S.C. § 103(a) as being unpatentable over Buddhikot and Eng in further view of U.S. Patent Publication No. 2004/0066759 (Molteni), and the Examiner rejected claims 4 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Buddhikot, Eng, and Molteni in further view U.S. Patent Publication No. 2005/0018686 (Igarashi).

Applicants also note the change in the Art Unit from 2617 on the previous Office Action to 2618 on the current Office Action.

### **2. Status of the Claims**

Presently pending are claims 1-54, of which claims 1, 20, 24, 25, 38, 45, and 54 are independent, claims 50-53 are withdrawn, and the remainder are dependent. Applicants have amended various claims as follows.

Applicants have amended each of independent claims 1, 20, 24, 25, 38, 45, and 54 to recite, in one way or another, the mobile registration message being used to register the mobile station for services in the wireless network. Additionally, each of these claims have been amended to include an element that recites, in one way or another, registering the mobile station in the wireless network for services determined according to the access point identifier included in the mobile registration message. Support for these amendments can be found in the original specification at page 7, lines 1-17, page 18, line 6, to page 19, line 20, and in Figures 6 and 7, for example. No new matter has been introduced.

Applicants have also amended each of dependent claims 2, 3, 5, 7, 9-19, 21, 28, and 29 in order to ensure consistency of antecedent basis with their respective base claims. No new matter has been introduced.

### 3. Response to the Claim Rejections

#### a. Buddhikot and Eng

The Examiner rejected claims 1, 2, 6-20, 21, 22, 24, 25, 26, 32-49, and 54 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Buddhikot and Eng. In order to establish a *prima facie* case of obviousness of a claimed invention by applying a combination of references, the prior art must teach or suggest all of the claim limitations. M.P.E.P. § 2143. Applicants respectfully submit that the combination of Buddhikot and Eng fails to teach all of the limitations of any the above-listed claims, and further that the Examiner's reasoning with respect to the motivation to combine Buddhikot and Eng is logically flawed. Hence the Examiner has not established the requisite *prima facie* case of obviousness.

The following discussion is directed primarily to Applicants' independent claims 1, 20, 24, 25, 38, 45, and 54.

**The combination of Buddhikot and Eng does not teach or suggest a mobile registration message for registering a mobile station for services in a wireless network.**

Buddhikot teaches a scheme for authentication and dynamic key exchange. In particular, Buddhikot teaches (e.g., paragraph 7) a system that "provides for generation of *per session, per node*, security keys for encrypting/decrypting communications between a mobile node and an access point." (Emphasis added.) As disclosed in paragraph 8 of Buddhikot, generation of a security key is carried out in the context of a transaction between a mobile node and a network, wherein the mobile node and the network exchange signals containing various parameters and/or algorithmic functions of the parameters in the process of negotiating the security key. None of the signals disclosed in Buddhikot as being sent from the mobile node to the network is used to register the mobile node for services in the network. Rather, the signals comprise elements of a negotiation intended to provide secure communications between a mobile node and an access point, and to establish "a temporary security association between the mobile node and the network" (e.g., paragraph 9).

In contrast, Applicants' independent claims 1, 20, 24, 25, 38, 45, and 54 each recite, in one way or another, the mobile registration message being used to register the mobile station for services in the wireless network. Examples of services in the network include Mobile IP, location-based services, and billing based on access point, as described in Applicants' specification. Buddhikot does not teach or disclose these or any other services, because the transactions disclosed in Buddhikot are directed to negotiation of security keys. Hence none of the signals disclosed in Buddhikot as being sent from a mobile node to a network is a mobile registration message for registering a mobile station for services in a wireless network.

Similarly, Eng fails to teach a mobile registration message for registering a mobile station for services in a wireless network, as expressly recited, in one way or another, in each of Applicants' independent claims. Rather, Eng teaches that a mobile station may transmit a management frame that includes the address of an access point (e.g., column 1, lines 60-64, and column 6, lines 27-36). However, the purpose of the management frame is to facilitate a *link-level association* between the mobile station and the access point, *not* to register the mobile station for services in a wireless network. Thus, Eng fails to make up for the deficiency of Buddhikot with respect to this element of Applicants' independent claims. Applicants therefore submit that the combination of Buddhikot and Eng fails to teach or suggest a mobile registration message for registering a mobile station for services in a wireless network.

**The combination of Buddhikot and Eng does not teach or suggest registering a mobile station for services in a wireless network determined according to an access point identifier in a mobile registration message.**

As described above, Buddhikot teaches negotiation of security keys between a mobile node and an access point, and establishment of a temporary security association between the mobile node and a network. While Buddhikot discloses that an access point ID is used a parameter in algorithmically calculating a security key (e.g., paragraph 8), Buddhikot does not teach that the access point is determinative of services for which the

mobile node registers. Indeed, as discussed above, Buddhikot does not teach registering a mobile station for any services in a wireless network.

In contrast, Applicants' independent claims 1, 20, 24, 25, 38, 45, and 54 each recite, in one way or another, registering the mobile station in the wireless network for services *determined according to the access point identifier included in the mobile registration message*. Both registering a mobile station for services in a wireless network and determining the services according to access point identifier are lacking in Buddhikot.

Again, since Eng does not teach or suggest registering a mobile station for services in a wireless network, nor determining services based on an access point identifier, Eng fails make up for the deficiency of Buddhikot in this regard. Applicants therefore submit that the combination of Buddhikot and Eng fails to teach or suggest registering the mobile station in the wireless network for services determined according to the access point identifier included in the mobile registration message.

Even beyond the failure of the combination of Buddhikot and Eng to teach or suggest all of the elements of Applicants' independent claims, Applicants respectfully submit that the Examiner's motivation for combining Buddhikot does not logically follow from anything taught or suggested in either reference. Specifically, the Examiner suggested that it would have been obvious for one of ordinary skill in the art "to modify Buddhikot et al. with inserting an access point identifier into a mobile registration message at a mobile station and sending the mobile registration message from the mobile station in order for the mobile station to register with the foreign network and allow the foreign network to notify the mobile station home network that it is now registered within its area, which would reduce the load on the mobile station home network, as taught by Eng et al."

Notwithstanding Applicants' argument above that neither Buddhikot nor Eng teaches or suggests a mobile registration message for registering a mobile station for services in a wireless network, *Buddhikot already teaches an access point ID*. Thus, modifying Buddhikot with the teachings of Eng, as suggested by the Examiner, does introduce into Buddhikot an access point ID that is not already disclosed therein. At most, Eng teaches an alternative means of introducing an access point ID into Buddhikot. However, the Examiner's reasoning

requires only that Buddhikot include an access point ID, *not that the mobile station supplies it*. Since Buddhikot already does teach an access point ID, the supposed advantage (suggested by the Examiner) that Buddhikot might derive from Eng with regard to an access point ID is already present without the need to rely on Eng. Thus the supposed advantage cannot logically be viewed as a motivation to combine Buddhikot and Eng. Applicants therefore respectfully submit that the Examiner's reasoning with respect to the motivation to combine these references is logically flawed.

Further, the Examiner's assertion that introducing an access point identifier into Buddhikot "would reduce the load on the mobile station home network, as taught by Eng et al." is not supported in either Eng or Buddhikot. Eng simply does not teach or disclose anything about reducing a load on a mobile station home network. Indeed, the use of an access point identifier in adjusting the load on a network *is taught by Applicants as one advantage of their invention* (page 14, lines 20-22, for example). Thus, the Examiner's argument for motivation to combine Buddhikot and Eng amounts to hindsight reasoning *based on Applicants' teaching*, and as such, in accordance with M.P.E.P. § 2141, is improper. Moreover, the modification to Buddhikot suggested by the Examiner would change the principle of operation of Buddhikot, because each security negotiation is carried out on a per session, per node basis. Thus, *a new negotiation* would be required if an alternative access point were determined in order to change how the load is distributed.

Finally, as noted, Buddhikot teaches a security negotiation. As is known in the art, the more information that is transmitted in the open, the more susceptible the negotiation is to security compromise. One of ordinary skill in the art would not be inclined to include additional information, such as an access point identifier, in the open messaging of the negotiation – particularly when this information is already available through other means, as it is in Buddhikot. The undesirability of adding more information in the open phase of the security negotiation taught by Buddhikot further erodes any potential motivation to combine the references.

Applicants submit that for at least the reasons discussed above, the combination of Buddhikot and Eng fails to teach or suggest all of the elements of any of Applicants'

independent claims 1, 20, 24, 25, 38, 45, and 54, and that these claims are therefore allowable.

Each of claims 2, 6-19, 21-22, 26, 32-37, 39-44, and 46-49 depends, in one way or another, from one of the independent claims, all of which are allowable for at least the reasons discussed above. Applicants submit that for at least the reason that each of claims 2, 6-19, 21-22, 26, 32-37, 39-44, and 46-49 depends from an allowable claim, each of claims 2, 6-19, 21-22, 26, 32-37, 39-44, and 46-49 is allowable as well. Further, Applicants do not concede of the Examiner's assertions with regard to any of claims 2, 6-19, 21-22, 26, 32-37, 39-44, and 46-49.

**b.     Buddhikot, Eng, and Molteni**

The Examiner rejected claims 3, 5, 23, and 27-30 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Buddhikot, Eng, and Molteni. Each of claims 3, 5, 23, and 27-30 depends, in one way or another, from one of the independent claims, all of which are allowable for at least the reasons discussed above. Applicants submit that for at least the reason that each of claims 3, 5, 23, and 27-30 depends from an allowable claim, each of claims 3, 5, 23, and 27-30 is allowable as well. Further, Applicants do not concede of the Examiner's assertions with regard to any of claims 3, 5, 23, and 27-30.

**c.     Buddhikot, Eng, Molteni and Igarahi**

The Examiner rejected claims 4 and 31 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Buddhikot, Eng, Molteni and Igarashi. Each of claims 4 and 31 depends, in one way or another, from one of the independent claims, all of which are allowable for at least the reasons discussed above. Applicants submit that for at least the reason that each of claims 4 and 31 depends from an allowable claim, each of claims 4 and 31 is allowable as well. Further, Applicants do not concede of the Examiner's assertions with regard to any of claims 4 and 31.

#### **4. CONCLUSION**

Applicants submit that the present application is in condition for allowance, and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, the Examiner is invited to telephone the undersigned at (312) 913-3353.

Respectfully submitted,  
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